

# PostScript

## LETTERS

### Tension pneumothorax prevalence grossly exaggerated

The recent consensus statement from the faculty of prehospital care stated prevalence of tension pneumothorax which is misleading and up to 20 times higher than that which might be seen by the standard prehospital care practitioner.<sup>1</sup> Further analysis of the two references used for this statement is given and it can be seen that their results should not be extrapolated to the general prehospital environment without qualification.

Coats described tension pneumothorax in up to 5.4% of patients, 64% of whom were ventilated. They were also a major trauma subgroup.<sup>2</sup>

McPherson looked retrospectively at US soldier fatalities in Vietnam—when there was no prehospital chest decompression.<sup>3</sup> His abstract and discussion, however, misrepresent the figures stated in his results and the study has methodological flaws. Accepting these flaws though, he observed that fatal tension pneumothorax may have occurred in up to 0.3% of American casualties (26/7801) and 3.9% of casualties who died with signs of a chest wound (26/663). Despite its flaws, the McPherson's paper may be more applicable to the average prehospital clinician as it looks purely at awake patients.

However, the external validity of both these papers (which look at high risk groups) to prehospital clinicians seeing a predominance of blunt trauma, awake patients should be questioned. The inference that should be taken away by the reader is that "fatal tension pneumothorax is very unlikely to occur in more than 0.3% of awake patients encountered in pre-hospital care". Even this is probably too high, but may go some way to stemming the tide of iatrogenic, needle induced pneumothorax.

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### References

- 1 Lee C, Revell M, Porter K, et al. The prehospital management of chest injuries: a consensus statement. Faculty of Pre-hospital Care, Royal College of Surgeons of Edinburgh. *Emerg Med J* 2007;24:220-4.
- 2 Coats TJ, Wilson AW, Xeropotamos N. Pre-hospital management of patients with severe thoracic injury. *Injury* 1995;26:581-5.
- 3 McPherson JJ, Feigin DS, Bellamy RF. Prevalence of tension pneumothorax in fatally wounded combat casualties. *J Trauma* 2006;60:573-8.

### Response: tension pneumothorax prevalence grossly exaggerated

In our article we stated:

(1) "tension pneumothorax is a rare prehospital event, particularly in blunt trauma"

(2) "it is difficult to assess the exact numbers accurately as thoracocentesis is often performed in the absence of a true tension pneumothorax"

(3) "recent studies show a prevalence of less than 6%".

We believe the comments in your letter concur with this.

In your excellent review of tension pneumothorax in the *EMJ* in 2005 you also described the same incidence, stating "TPT was confirmed (hiss of air on decompression) in 5.4% of major trauma patients (64% whom were ventilated) treated by prehospital doctors in London".<sup>1</sup>

With regards to your comment of hoping that awareness of the very low prevalence of tension pneumothorax will help in "stemming the tide of iatrogenic needle induced pneumothorax", we would agree that unnecessary needle decompression does occur in practice. However, prehospital practitioners should not believe that tension pneumothorax is so unlikely that they fail to treat a reversible life threatening condition in the individual patient who is deteriorating or is peri-arrest following a chest injury. We would rather an iatrogenic simple pneumothorax than a patient who dies from a simple reversible cause because the practitioner believed it to be so rare.

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Competing interests: None declared.

### Reference

- 1 Leigh-Smith S, Harris T. Tension pneumothorax—time for a rethink? *Emerg Med J* 2005;22:8-16.

### Mouthwash for anaphylaxis

We were called to the emergency department to help manage a suspected case of anaphylaxis. Shortly after eating hazelnuts, a middle aged man developed lip and tongue swelling and complained of difficulty in breathing. On arrival at accident and emergency this had progressed so that he was unable to speak, demonstrated pronounced inspiratory stridor and had obvious tongue swelling, although air entry remained good with no wheeze on auscultation. He was cardiovascularly stable.

Initial management of high flow oxygen, epinephrine (adrenaline) nebulisers, intravenous access and fluids and a 20 µg bolus of intravenous epinephrine (1:100 000 dilution) produced rapid improvement with a notable reduction in the stridor. Intravenous chlorpheniramine and hydrocortisone were commenced and monitoring continued in the resuscitation room. However, after 45 min, his condition deteriorated with return of the stridor and pronounced lip swelling. This improved with repeated epinephrine administration. However, the fluctuating pattern to his condition continued with repeated development of upper airway oedema that rapidly resolved following nebulised and intravenous epinephrine.

Eight hours after initially ingesting the nuts the patient was given a simple mouthwash and advised to brush his teeth. When his mouth was rinsed, small fragments of nut were noted in the water. Following this he remained stable, with no further lip or tongue swelling and no recurrence of the stridor. He was admitted, made an uneventful recovery and was discharged after 48 h.

Follow up by the Allergy Department confirmed a previously unidentified allergy to hazelnuts.

Resuscitation Council Guidelines for the emergency management of anaphylaxis<sup>1</sup> fails to mention discontinuation of the causative agent, although in earlier suggested guidelines this is mentioned.<sup>2</sup> We believe this case illustrates the importance of identifying and removing the causative agent when managing cases of anaphylaxis. In this case, earlier removal of the "triggering" nuts may have prevented the continued reactivation of the allergic response.

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### References

- 1 Resuscitation Council (UK). The emergency medical treatment of anaphylactic reactions for first medical responders and community nurses. Revised Jan 2002, May 2005 (originally published July 1999). <http://www.resus.org.uk/pages/reaction.htm>.
- 2 Gavalas M, Sadana A, Metcalf S. Guidelines for the management of anaphylaxis in the emergency department. *J Accid Emerg Med* 1998;15:96-8.

### Wind storm

On Thursday 18 January 2007, heavy storms battered England and much of Europe. The Meteorological Office reported that wind speeds were the highest in the UK in 17 years. Recorded winds between 70-80 mph tore across Britain, blowing trees across rail lines, cutting off power to thousands, and causing roofs to collapse. Across Britain, there were three weather related deaths: two deaths caused by collapsing walls and one due to a falling tree crushing its victim. We examined the attendance in accident and emergency for the 6 h period following the severe weather that hit the UK earlier that morning and assessed its impact on the hospital services. An audit of accident and emergency activity performed on that day in a busy London hospital revealed the following.

Three hundred and nine patients were seen on the 18 January in our accident and emergency department, of which 120 were seen between 13:00 and 19:00. Eleven

**Table 1** Recorded injuries

Fractured hips	3
Facial fractures	2
Facial soft tissue injuries needing treatment	3
Shoulder dislocation and swollen knee	1
Fracture wrist/hand	2
Minor soft tissue injuries	4

patients (9.2%) cited storm wind as being a contributory factor for their attendance. Nine of these patients were women and 10 were over the age of 60 years. Table 1 lists the recorded injuries.

Although the overall attendance over the 24 h period was not increased, there was an unusually high activity for the same 6 h time frame in the accident and emergency department. Nine per cent of the patients seen were wind related injuries with some patients presenting with more than one injury. Seven of the 11 patients required inpatient management. We are aware of two other fractures that required inpatient surgical treatment that presented outside our time frame.

These figures highlight the true human cost of "wind damage" in an area of north west London. The economic cost of seven additional surgical admissions in this small patch of the country may have been mirrored all over the country. Although the Department of Health does provide London with emergency planning weather, environmental and temperature warnings, our data suggest that early weather warnings by the Met Office may need to be directed at high risk groups, notably elderly women.

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The authors are grateful for the accident and emergency staff for their help on the day of the storm and in collating the data

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## Oral N-acetylcysteine for acute paracetamol poisoning

In the UK, a 20 h intravenous N-acetylcysteine (NAC) regimen is the standard antidote for significant acute paracetamol poisoning. In the USA, although the Food and Drug Administration approved the use of an intravenous formulation of NAC in 2004, a 72 h oral NAC protocol is still standard practice.<sup>1</sup> If the US experience demonstrates that oral NAC is safe and effective, then it might be reasonable occasionally to use it in the UK—for example, in cases of difficult or refused intravenous access.

A national email survey of all 64 emergency medicine consultants and registrars in Wales

was performed to determine attitudes to the use of oral NAC. After a further email reminder a total of 51/64 had replied, a response rate of 80%. Only 29/51 (57%) knew about oral NAC, and only 2/51 (4%) had used it (both in the USA). Having been made aware of it, 36/51 (71%) would consider using it, particularly for cases of difficult intravenous access or needle phobia, providing there was evidence for its safety and efficacy, and it was available.

Oral NAC is available in the UK on a named patient basis, and the standard intravenous preparation can be drunk through a straw (preferably disguised in cola or juice).

No randomised controlled trial has been performed to compare oral and intravenous NAC. The 2006 Cochrane review of several case series concluded there was no clear difference in efficacy (in terms of hepatotoxicity and mortality rates) between intravenous and oral routes. No studies have demonstrated any difference in safety or side effects.<sup>2</sup>

Oral NAC has been used for 30 years in the USA with similar efficacy and safety as in the UK with intravenous NAC. This survey suggests that UK emergency physicians might welcome the option to use oral NAC in certain limited circumstances, if it were more readily available.

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## References

- 1 Prescott L. Oral or intravenous N-acetylcysteine for acetaminophen poisoning? *Ann Emerg Med* 2005;**45**:409–13.
- 2 Brok J, Buckley N, Gluud C. Interventions for paracetamol (acetaminophen) overdoses. *Cochrane Database Syst Rev* 2006;(2):CD003328.

## BOOK REVIEWS

### Developing the wise doctor: a resource for trainers and trainees in the MMC

Edited by Della Fish, Linda de Cossart. Published by The Royal Society of Medicine Press, 2007. ISBN 13 978-1-85315-618-2

Flattened by MMC? This book will resuscitate you whether trainer or trainee.

Faced with a new model of training I am uncertain as to how to best help trainees, uncomfortable with some of the underlying logic of MMC with its emphasis on assessment, progression, limited time, early career decisions... and a sense that something important is missing. This book helped me, confirmed that I wasn't losing it, that the things I think are important others do as well, and that these important things are not expressed easily and are difficult to grapple with but no less important for this.

This book reaffirms what it is to be a doctor in the face of the techno-rational approach that sees doctors as technicians whose education is divisible into small assessable chunks.

The first part of the book critiques present postgraduate medical education and identifies those things you know are important but difficult to describe and teach. Specifically the significance of context, the professional values the doctor subscribes to, different kinds of knowledge, clinical thinking, professional judgement and the therapeutic relationship. The second part sets about helping you get these things that you acquired by osmosis, haphazardly, unknowingly over a long time. Future trainees need to get to the end point faster and more efficiently than their trainers. The sections are easy to follow with a similar format, a scenario, an important principle, a heuristic (short cut, rule of thumb) principle, resources that explain the principle, how it can be used, and a conclusion to the opening scenario.

In an age of pressure to reach targets, with increased government surveillance of the medical profession, this book will come as a breath of fresh air and perhaps provide a roadmap that leads to re-establishing what is important in medicine.

At the end of this you will feel refreshed that all is not lost and that there are ways to teach those things that are difficult to make tangible.

**M J Clancy**

## Core topics in airway management

Edited by Ian Calder, Adrian Pearce. Cambridge University Press, 2005, £35 (hardback). ISBN 1-841-10158-3

There is a clear and increasing awareness of the importance of airway management for emergency medicine doctors. Does this book contribute to the knowledge base required to practise this skill in emergency medicine?

The editors and their 18 contributing authors are all consultant anaesthetists, and their book is not surprisingly targeted at the anaesthesia/intensive medicine section of the market, although emergency medicine is mentioned in the preface. Sadly this is the only time that emergency medicine is acknowledged. There are sections of generic value (for example, the anatomy and physiology chapters) which are well-written, although the style could best be described as quirky—the anatomy chapter opens with "Fine lingerie itself is rather tedious: it is the context that makes it exciting". From this intriguing start, this particular chapter gives an excellent (and entertaining) description of the functional anatomy involved. The remainder of the book, however, does not gel effectively, and rather than a cohesive textbook you get the impression of a series of somewhat unrelated essays—for example, the properties of six different types of laser tubes are detailed in one chapter, but there is no chapter on failed intubation.

There are many suggestions throughout the book which indicate that the individual authors are imparting valuable tricks of the trade, not to be found in more academic texts, and this is one of the book's strengths. From an emergency medicine point of view, however, a major deficit is that there is no section on decision making regarding the need to definitively manage an airway, which seems to me to be the most core

topic of them all. The authors have also avoided a specific section on induction drugs and paralyzing agents, although there are periodic references scattered throughout the text.

Illustrations are of varying quality; the colour photographs are generally very good, the line drawings are clear, but many of the black and white photographs are reduced to an excessively small size and it is difficult to make out the points they are intended to clarify. There are three photographs (and a biography) of Archie Brain, and with due regard to his achievements, I am not persuaded that this is necessary in a 209 page core topics book.

In short, although there are some good chapters in this book, there are "core topics" which are key to the emergency medicine doctor which are completely missing. I personally think the missing topics should also be key to anaesthetists—but I am not sure if I could get away with such an assertion. I'm afraid I would not recommend this book for emergency medicine doctors.

Neil Nichol

## CORRECTIONS

doi: 10.1136/emj.2006.041236corr1

Puranik G, Gillham N. Bilateral fractured clavicles with multiple rib fractures. *Emerg Med J* 2007;**24**:675.

An error has occurred within the third column of this Image in Emergency Medicine. On line 3, ORIF should read as "(open reduction and internal fixation)".

doi: 10.1136/emj.2007.051334corr1

McEwan K, Thompson P. Ultrasound to detect haemothorax after chest injury. *Emerg Med J* 2007;**24**:581–582.

An error has occurred in this Best Evidence Topic report (BET) on page 581. In line 9 of the Comments section, the sentence should read as follows:

When compared directly to the supine chest x ray, ultrasound is shown to be more sensitive

at detecting the presence of the haemothorax and is at least as specific and accurate.

doi: 10.1136/emj.2007.053819corr1

## NOTICE OF DUPLICATE PUBLICATION

Sultan J, Curran AJ. The effect of warming local anaesthetics on pain of infiltration. *Emerg Med J* 2007;**24**:791–793 (doi:10.1136/emj.2007.053819).

The above Best Evidence Topic report (BET) published in volume 24, issue 11 (November) is a duplicate publication of the same report published in volume 24, issue 10 (October) as follows:

Sultan J, Curran AJ. Effect of warming local anaesthetics on pain of infiltration. *Emerg Med J* 2007;**24**:723–725 (doi:10.1136/emj.2007.053223).

The publisher apologises and is withdrawing the version published in the November issue (doi:10.1136/emj.2007.053819).

## IMAGES IN EMERGENCY MEDICINE

# Fracture of the posterior process of the talus: an unusual injury

R Ahmad, S M Y Ahmed

Most attention in the literature has been devoted to fractures of the neck of the talus, whereas fractures involving processes of the talus have been relatively neglected. Consequently, questions persist regarding these fractures and misdiagnosis is common.

A woman in her 50s slipped off decking and landed with her foot in hyper planter flexion sustaining a fracture of the posterior process of the talus (fig 1). This was treated conservatively.

Fracture of the posterior process of the talus is rare and is often misdiagnosed as ankle sprain. In one case series, 17 of 20 patients with fractures were misdiagnosed with ankle sprains.<sup>1</sup> It is most likely caused by forceful plantar flexion of the ankle producing a nutcracker-like compression of the posterior process between the posterior malleolus and the calcaneus.

An understanding of the complex anatomy of the hind foot is required.

The clinician must be knowledgeable in the interpretation of plain radiographs and in the use of additional studies, such as CT scans. Failure to diagnose and initiate proper immobilisation frequently results in painful non-union and disability.

*Emerg Med J* 2007;**24**:867.  
doi: 10.1136/emj.2006.045609

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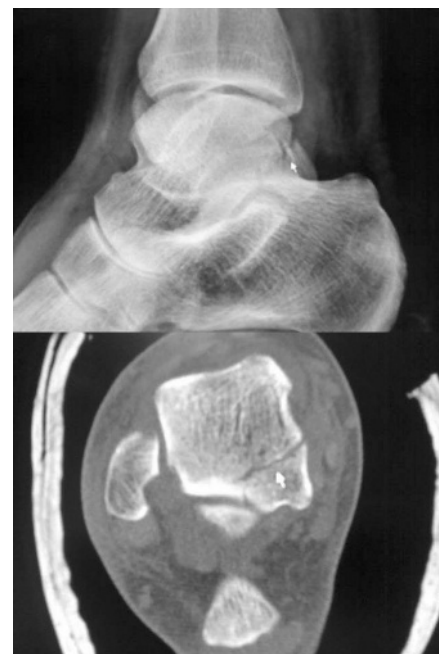
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Informed consent was obtained for publication of the person's details in this report.



**Figure 1** X ray and CT scan showing fracture of the posterior process of the talus.

## REFERENCE

- Paulos LE, Johnson CL, Noyes FR. Posterior compartment fractures of the ankle. A commonly missed athletic injury. *Am J Sports Med* 1983;**11**:439–43.